

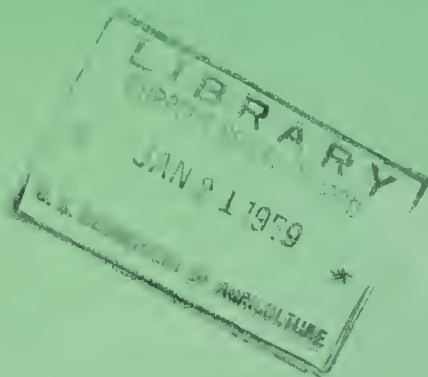
# **Historic, Archive Document**

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Here, on Mt. Rose, Nevada, Dr. J. E. Church made  
the first western snow survey 50 years ago.



FEDERAL - STATE - PRIVATE COOPERATIVE  
SNOW SURVEY and WATER SUPPLY FORECASTS  
for  
ARIZONA

UNITED STATES DEPARTMENT of AGRICULTURE  
SOIL CONSERVATION SERVICE  
and  
SALT RIVER VALLEY WATER USERS ASSOCIATION

RECEIVED AS OF  
JAN. 15, 1959

This report was prepared by the agencies  
mentioned in the title, State and private.  
All figures in the last page of this report.

## UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

### TO RECIPIENTS OF COOPERATIVE SNOW SURVEY AND WATER SUPPLY FORECAST REPORTS:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Fortunately, most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from fore-knowledge of the runoff.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, about 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1300 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

By relating snow survey measurements taken over a period of years to spring-summer runoff during the same period, relationships have been developed which make it possible to forecast seasonal runoff several months in advance of occurrence. In order to make a forecast, once a forecast relationship has been developed, the maximum snow water content at previously selected key snow courses is usually entered in the forecast relationship. More accurate forecasts are often obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast relationships.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions.

### PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	COOPERATING WITH	LOCATION
<b>RIVER BASINS</b>			
COLORADO, RIO GRANDE AND ARKANSAS .....	MONTHLY (FEB.-MAY) .....	COLO. EXP. STATION COLO. STATE ENGINEER NEW MEXICO STATE ENGINEER	FT. COLLINS, COLO.
COLUMBIA <i>Includes Alaska</i> .....	MONTHLY (JAN.-MAY) .....	IDAHO STATE ENGINEER .....	BOISE, IDAHO
UPPER MISSOURI .....	MONTHLY (FEB.-MAY) .....	MONT. AGR. EXP. STATION .....	BOZEMAN, MONTANA
WEST-WIDE .....	(OCT. 1, APR. 1 AND MAY 1) .....	COOPERATORS .....	PORTLAND, OREGON
<b>STATES</b>			
ARIZONA .....	SEMI-MONTHLY (JAN. 15-APR. 1) .....	SALT R. VALLEY WATER USERS ASSOCIATION .....	PHOENIX, ARIZONA
NEVADA .....	MONTHLY (FEB.-APR.) .....	NEVADA STATE ENGINEER .....	RENO, NEVADA
OREGON .....	MONTHLY (JAN.-MAY) .....	ORE. AGR. EXP. STATION .....	PORTLAND, OREGON
UTAH .....	MONTHLY (JAN.-MAY) .....	UTAH STATE ENGINEER UTAH AGR. EXP. STATION .....	SALT LAKE CITY, UTAH
WASHINGTON .....	MONTHLY (FEB.-MAY) .....	WASH. STATE DEPT. OF CONSERVATION .....	SPOKANE, WASHINGTON
WYOMING .....	MONTHLY (FEB.-JUNE) .....	WYOMING STATE ENGINEER .....	CASPER, WYOMING

Copies of the various reports may be secured from: Head, Water Supply Forecasting Section  
Soil Conservation Service  
209 S.W. 5th Avenue, Portland 4, Oregon

### PUBLISHED BY OTHER AGENCIES

#### OTHER SNOW SURVEY REPORTS

BRITISH COLUMBIA .....	MONTHLY (FEB.-JUNE) .....	COMPTROLLER, WATER RIGHTS BR., DEPT. OF LANDS AND FORESTS, PARLIAMENT BLDGS. VICTORIA, B.C.
CALIFORNIA .....	MONTHLY (FEB.-MAY) .....	CALIFORNIA DEPARTMENT OF WATER RESOURCES, SACRAMENTO, CALIFORNIA

FEDERAL-STATE COOPERATIVE SNOW SURVEYS AND WATER SUPPLY FORECASTS

for

A R I Z O N A

(Salt, Verde, Gila and Part of Lower Colorado River Basin)

Issued

January 15, 1959

Report Prepared

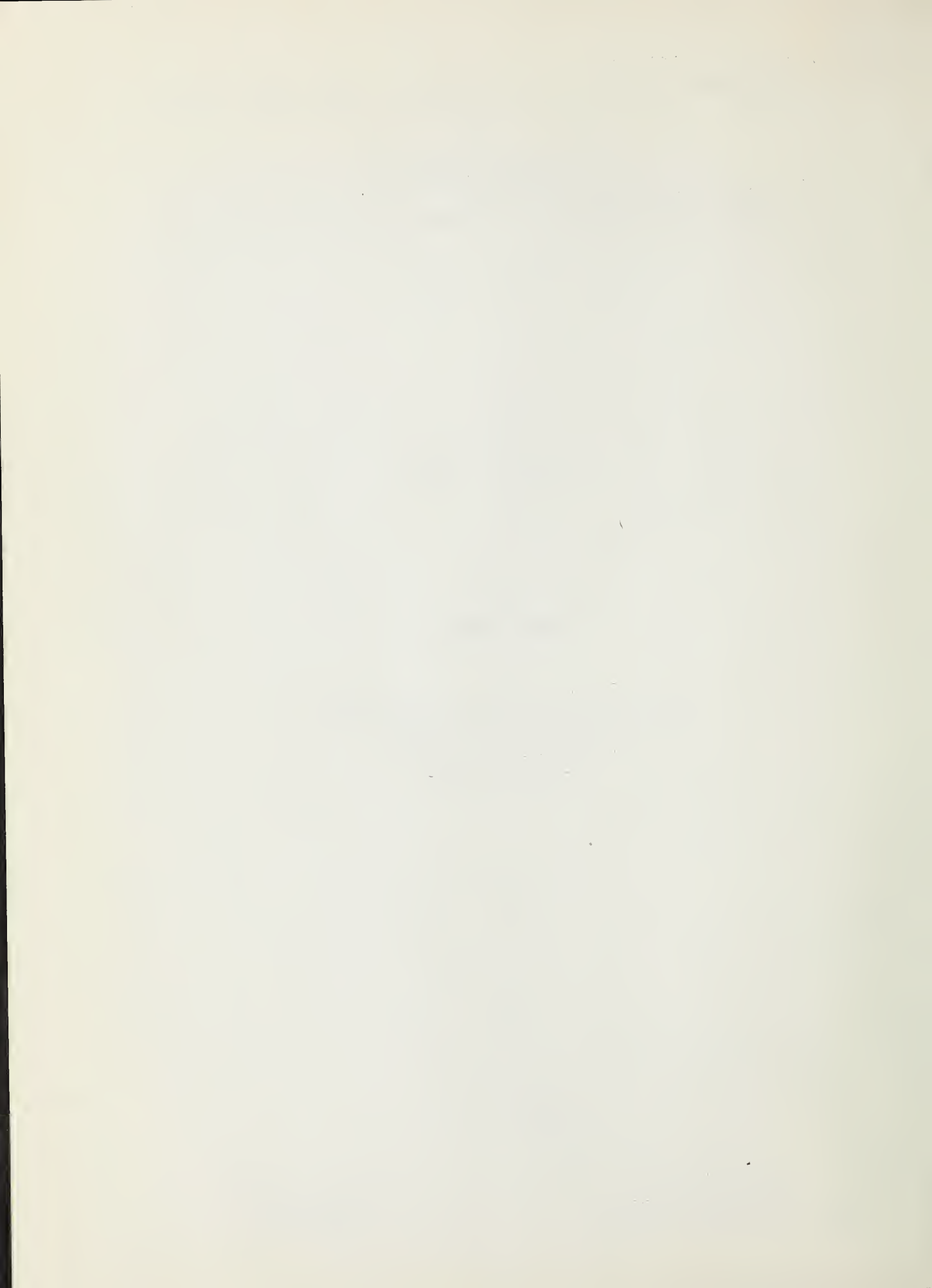
by

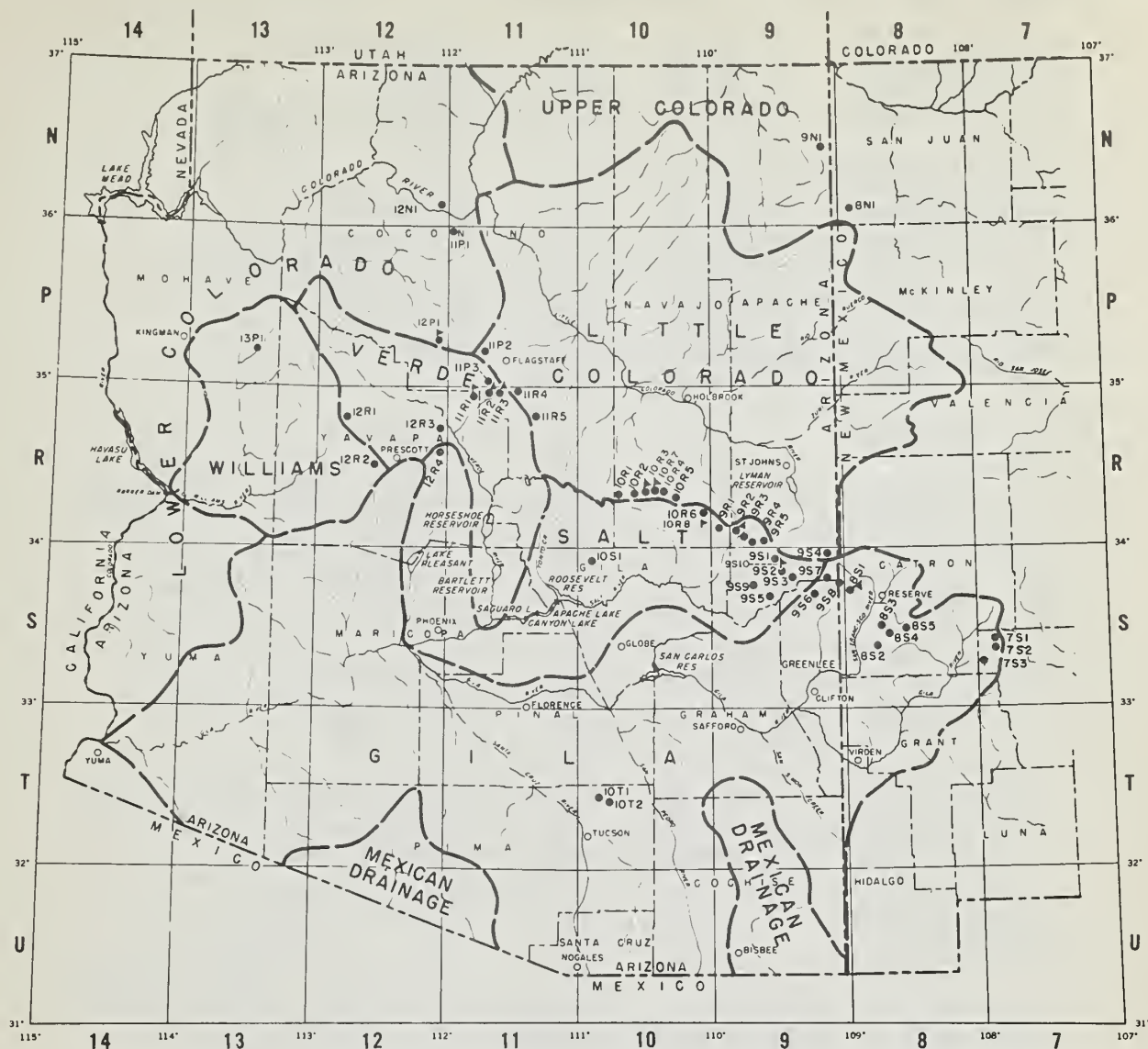
George Watt, Snow Survey Supervisor  
Soil Conservation Service  
Post Office Box 929  
Phoenix, Arizona

Issued by

Robert V. Boyle  
State Conservationist  
Soil Conservation Service

Victor I. Corbell  
President  
Salt River Valley Water Users' Ass'n.





### LEGEND

- DRAINAGE BASIN BOUNDARY
- SNOW COURSE
- SNOW COURSE and SOIL MOISTURE STATION
- ▲ SOIL MOISTURE STATION ONLY

## ARIZONA COOPERATIVE SNOW SURVEYS SNOW COURSES AND DRAINAGE BASINS JANUARY 1959



# INDEX to SNOW COURSES and SOIL MOISTURE STATIONS

NUMBER **	NAME	SEC	TWP	RGE ***	ELEVATION	RIVER BASIN
11P3	Antelope Park	29	19N	8E	7300	Verde-----Discontinued
9S1	Baldy (p)	28	7N	27E	9125	Salt-Little Colorado
10T1	Bear Wallow	6	12S	16E	8100	Gila
9S6	Beaver Head	13	4N	30E	8000	Salt-Frisco
9S3	Big Lake Knoll	2	5N	28E	8800	Salt-Frisco-Little Colorado-- Discontinued
7S3	Black Canyon	8	13S	11W****	6790	Gila
9S10-*	Black River Divide	11	6N	27E	9100	Salt-Little Colorado
12N1	Bright Angel	34	33N	3E	8400	Lower Colorado
12R1	Camp Wood	3	16N	6W	5700	Williams-Verde
10R3-M	Canyon Creek	18	11N	15E	7500	Salt-Little Colorado--Replaced by 10R7-M
10R7-M	Canyon Creek #2	18	11N	15E	7500	Salt-Little Colorado
11R2-M	Casner Park	19	18N	8E	6930	Verde
12P1-M	Chalender	27	22N	3E	7100	Verde
10R8-*	Corduroy Creek	Lat. 34°07'N. Long. 110°08'W. §			6000	Salt
9S9	Corn Creek (p)	Lat. 33°45'N. Long. 109°45'W. §			7730	Salt----- Not Read
8S3	Corner Mountain	7	10S	17W****	8850	Gila-Frisco----- Not Read
9S7	Coronado Trail	26	5N	30E	8000	Salt-Frisco
10R2	Elk	31	11N	14E	7600	Salt-Little Colorado---Discontinued
10R6	Forest Dale	2	9N	21E	6430	Salt-Little Colorado
11P2	Fort Valley	22	22N	6E	7350	Verde-Little Colorado
9R5	Ft. Apache	18	7N	27E	9160	Salt-Little Colorado
8S1-M	Frisco Divide	31	6S	20W****	8000	Frisco-Gila
12R4	Gaddes Canyon	11	15N	2E	7600	Verde-Agua Fria
10R5	Gentry	36	11N	15E	7600	Salt
11P1	Grand Canyon	21	30N	4E	7500	Lower Colorado
11R5	Happy Jack	30	17N	9E	7630	Verde
10R4	Heber (p)	28	11N	15E	7600	Salt-Little Colorado
7S2	Inman	6	11S	10W****	7800	Gila
12R2	Iron Springs	22	14N	3W	6200	Williams-Verde
9S2	Maverick Fork (p)	13	6N	27E	9050	Salt
9R4	McKay Peak	13	7N	24E	8250	Salt ----- Not Read
9R2-M	McNary	14	8N	23E	7200	Salt-Little Colorado
9R1	Milk Ranch	28	8N	23E	7000	Salt
12R3	Mingus Mountain	3	15N	2E	7100	Verde-Agua Fria
8S2	Mogollon	2	11S	19W****	7000	Frisco-Gila
11R4	Mormon Lake	13	18N	8E	7350	Verde-Little Colorado
11R3-M	Mormon Mountain	14	18N	8E	7500	Verde
11R1-M	Munds Park	7	18N	7E	6500	Verde
8S4	N-Bar Lake	16	10S	17W****	8600	Gila ----- Not Read
8S5	Negrito	6	10S	16W****	8200	Gila ----- Not Read
9S4	Nutriso	23	6N	30E	8500	Salt-Frisco-Little Colorado
9S5	Pacheta	At Town of Maverick, Ariz. §			7800	Salt
9N1	Roof Butte	15	8N	6W****	8500	Little Colorado--- Not Read
10T2	Rose Canyon	15	12S	16E	7300	Gila
9S8	State Line	6	6S	21W****	8000	Gila-Frisco
7S1	Taylor Creek	20	10S	10W****	7850	Gila
9R3	Trout Creek	5	7N	24E	6400	Salt----- Not Read
8N1	Washington Pass	Lat. 36°05'N. Long. 108°50'W §			8600	Little Colorado--Not Read
13P1	Willow Ranch	16	21N	11W	5000	Williams
10R1	Woods Canyon	15	11N	13E	7640	Salt-Little Colorado--- Discontinued
10S1	Workman Creek	33	6N	14E	6900	Salt

\* Soil Moisture Station only.

\*\* Number indicates location of snow course within coordinate rectangle, thus 9N1 is Course #1 in coordinate rectangle 9N.

\*\*\* All in Gila and Salt River Base and Meridian except where otherwise indicated.

\*\*\*\* New Mexico Principal Meridian

\*\*\*\*\* Navajo Base

M= Soil Moisture Station installed on or in vicinity of snow course.

§ = Unsurveyed

(p)= Storage gage installed on or in vicinity of snow course.

## ARIZONA WATER SUPPLY OUTLOOK

January 15, 1959

\*\*\*\*\*  
\* The prospects for a good runoff season are very \*  
\* poor to date. However, the stored water in the \*  
\* State is well above average and will supply \*  
\* sufficient water for the major irrigated areas. \*  
\*\*\*\*\*

SNOW COVER: There is very little snow cover in the mountains. The existing snow lays only in drifts and shady areas in the higher mountains. There is not sufficient snow to cause any appreciable increase in runoff during the melting period. It will be mostly absorbed by the soil. The snow on the White Mountain snow courses, which are the best indicators of the snow conditions on the Salt River Watershed, is only 21% of average. There was only a trace of snow reported on a few of the courses on the Gila River Watershed.

SOIL MOISTURE: Readings from the soil moisture stations in the mountain forests show the soil moisture conditions to be good at the higher elevations. Summer rains and an early Fall storm have kept the moisture relatively high. However, there has been some drying in the first foot of the four-foot profile measured.

PRECIPITATION: A random sample of thirteen stations reported by the U. S. Weather Bureau shows December to be an exceptionally dry month, and the precipitation for the October through December period to be well below average for almost all stations.

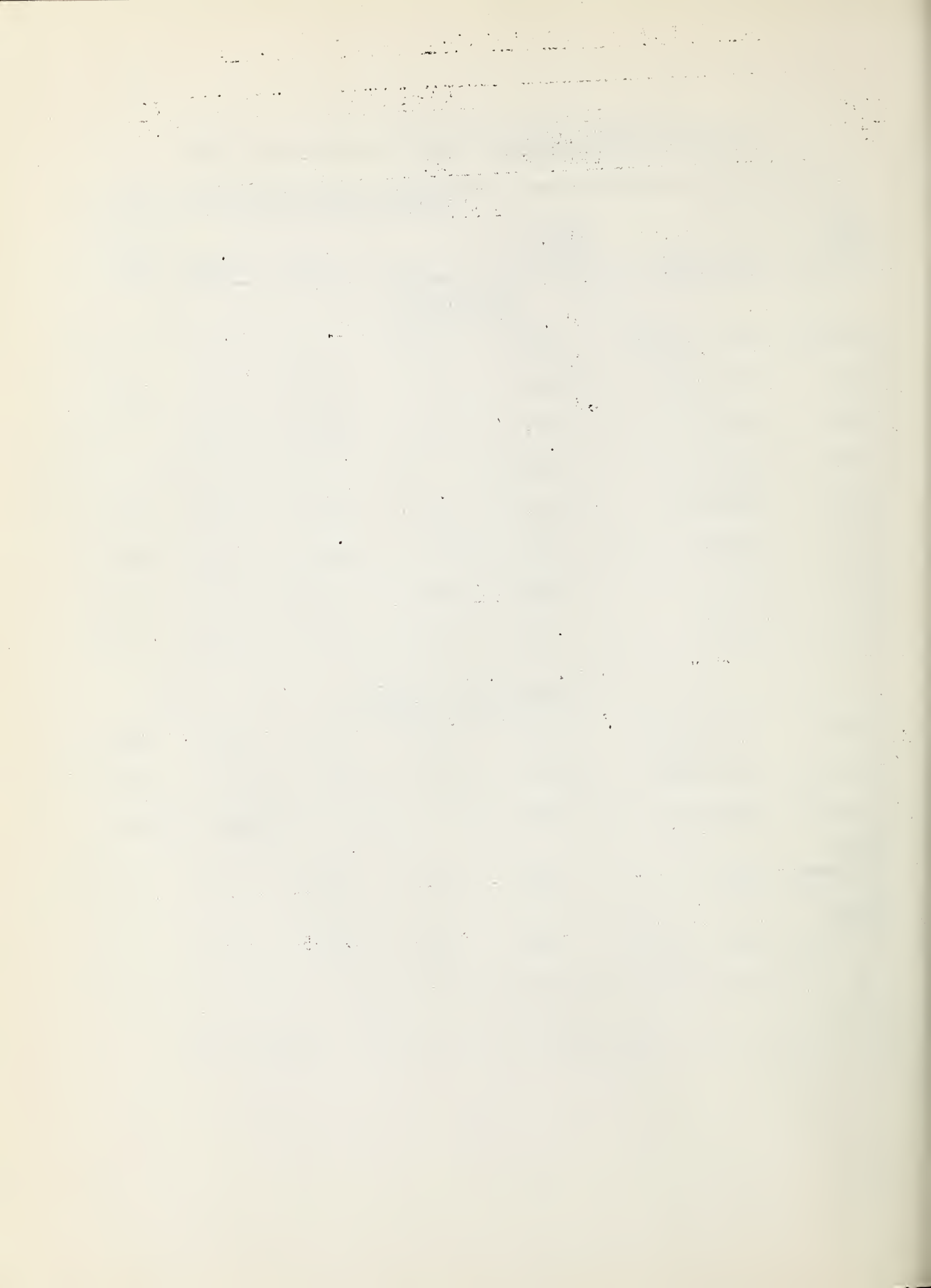
RESERVOIRED WATER: The water stored in the eight major reservoirs, excluding those on the Colorado River, is 125% of average and 30% of capacity. There is sufficient carry over from last year's runoff in the reservoirs for adequate water supply in the major irrigated areas.



STATUS OF ARIZONA RESERVOIR STORAGE - JANUARY 15, 1959

BASIN and/or STREAM	RESERVOIR	USABLE CAPACITY 1000s AF	USABLE STORAGE - 1000 ACRE FEET			15-Year Average 1938-52
			1959	1958	1957	
<u>GILA DRAINAGE</u>						
Agua Fria	Lake Pleasant	163.8	18.1	7.6	11.5	18.9 <sup>1/</sup>
Gila	San Carlos	1,205.0	110.5	58.1	6.0	114.2
Verde	Bartlett	180.0	103.9	104.2	28.0	38.1 <sup>1/</sup>
Verde	Horseshoe	143.0	2.3	1.3	36.4	13.2 <sup>1/</sup>
Salt	Roosevelt	1,381.6	436.0	53.9	84.6	397.1
Salt	Apache	245.1	239.1	199.3	81.4	168.3
Salt	Canyon	57.8	56.8	54.3	53.7	26.1
Salt	Saguaro	69.8	62.5	50.2	44.7	16.2
<u>LOWER COLORADO DRAINAGE</u>						
Colorado	Lake Havasu	688.0	543.6	510.7	612.6	554.5 <sup>1/</sup>
Colorado	Lake Mohave	1,810.0	1,656.6	1,546.0	1,572.0	1,380.0 <sup>1/</sup>
Colorado	Lake Mead	27,207.0	21,771.0	20,462.0	11,870.0	19,832.0
Little Colorado	Lyman	30.6	18.0	7.7	0.0	7.4 <sup>1/</sup>
Little Colorado	Show Low Lake	5.1	0.1	0.1	0.1	---

<sup>1/</sup> Average is for less than 15 years of record in the 1938-52 period.



SUMMARY OF JANUARY 15, 1959 ARIZONA SNOW SURVEYS AND  
COMPARISON OF DATA WITH THAT OF PREVIOUS YEARS BY WATERSHED

WATERSHED	No. of Courses in Average	Snow Depth 1959 Inches	Snow Water Content in Inches				Snow Density 1959 Percent	1959 Water Content in Percent of	
			1959	1958	1957	Normal		1958	Normal
Gila River	5	T	T	0.2	0.0	1.7	---	---	---
Salt River	13	1	0.3	0.7	0.8	2.9	30	43	10
Verde River	9	1	0.2	0.0	0.0	2.7	20	---	8
Williams River	3	0	0.0	0.0	0.0	1.4	---	---	---
Lower Colorado River	2	T	T	0.0	T	2.9	---	---	---
Little Colorado River	10	2	0.4	0.5	0.6	3.1	20	90	13



ARIZONA SNOW SURVEYS - ABOUT JANUARY 15, 1959

SNOW COVER MEASUREMENTS									
DRAINAGE BASIN and SNOW COURSE			1959			PAST RECORD			Prior Yrs. of Record
			Date of Survey	Snow Depth (In.)	Water Content (In.)	Water Content (In.) 1938-52 Average			
No.	Elev.					1958	1957		
2/									
GILA RIVER									
Nutriso	9S4	8500	1/14	T	T	0.2	0.0	1.9	19
Bear Wallow 3/	10T1	8100	1/14	0	0.0	0.9	0.0	2.2	11
Frisco Divide 3/	8S1-M	8000	1/14	1	0.6	---	0.0	1.7	18
State Line 3/	9S8	8000	1/14	0	0.0	---	0.0	2.2	18
Coronado Trail	9S7	8000	1/14	T	T	0.4	0.0	2.7	19
Beaver Head	9S6	8000	1/14	1	0.3	0.6	0.0	2.7	17
Taylor Creek	7S1	7850	1/14	0	0.0	0.0	0.0	0.7	15
Inman	7S2	7800	1/14	0	0.0	0.0	0.0	0.6	12
Rose Canyon 3/	10T2	7300	1/14	0	0.0	0.0	0.0	0.6	11
Mogollon 3/	8S2	7000	1/14	T	T	0.6	0.0	---	6
Black Canyon 3/	7S3	6790	Report Delayed			---	---	---	4
SALT RIVER									
Ft. Apache 1/	9R5	9160	1/14	9	1.6	2.7	2.8	---	7
Baldy 1/	9S1	9125	1/14	5	0.9	2.2	2.7	---	8
Maverick Fork	9S2	9050	1/14	T	T	3.3	4.7	---	8
Nutriso	9S4	8500	1/14	T	T	0.2	0.0	1.9	19
Coronado Trail	9S7	8000	1/14	T	T	0.4	0.0	2.7	19
Beaver Head	9S6	8000	1/14	1	0.3	0.6	0.0	2.7	17
Pacheta	9S5	7800	1/14	0	0.0	0.0	0.0	---	9
Gentry	10R5	7600	1/13	T	T	0.0	0.0	---	7
Heber	10R4	7600	1/13	T	T	0.0	0.0	---	7
Canyon Creek #2 3/	10R7-M	7500	1/13	T	T	0.0	---	---	1
McNary	9R2-M	7200	1/14	0	0.0	0.0	0.0	2.3	18
Milk Ranch	9R1	7000	1/14	0	0.0	0.0	0.0	1.2	17
Workman Creek	10S1	6900	1/12	4	1.2	0.0	0.0	---	7
Forest Dale	10R6	6430	1/14	0	0.0	0.0	0.0	0.8	18
VERDE RIVER									
Happy Jack	11R5	7630	1/14	0	0.0	0.0	0.0	---	6
Gaddes Canyon 3/	12R4	7600	1/14	3	1.0	0.0	0.0	---	5
Mormon Mountain	11R3-M	7500	1/12	3	1.0	0.0	T	---	8
Mormon Lake 1/	11R4	7350	1/12	4	0.8	0.0	T	4.0	12
Fort Valley 1/3/	11P2	7350	Report Delayed			0.0	0.0	2.9	12
Mingus Mountain	12R3	7100	1/14	0	0.0	0.0	0.0	1.0	12
Chalender	12P1-M	7100	1/14	T	T	0.0	0.0	3.4	12
Casner Park	11R2-M	6930	1/12	T	T	0.0	0.0	---	8
Munds Park	11R1-M	6500	1/12	T	T	0.0	0.0	---	7
Iron Springs 1/	12R2	6200	1/14	0	0.0	0.0	0.0	1.3	13
Camp Wood	12R1	5700	1/14	0	0.0	0.0	0.0	1.1	12

1/ On adjacent drainage.

2/ 1938-52 averages are estimated from existing records within period.

3/ Not included in watershed averages.



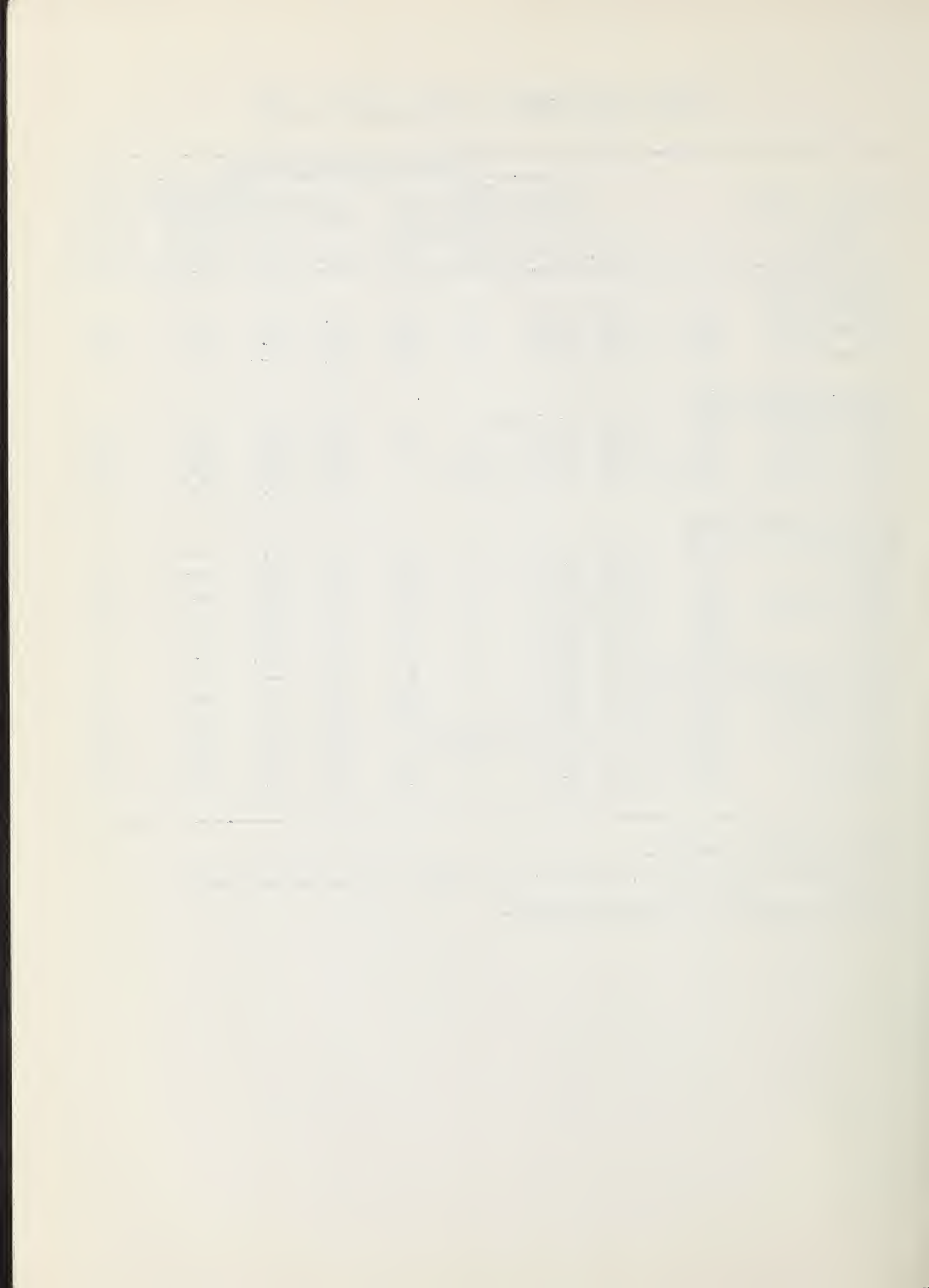
ARIZONA SNOW SURVEYS - ABOUT JANUARY 15, 1959

			SNOW COVER MEASUREMENTS						
DRAINAGE BASIN and SNOW COURSE	No.	Elev.	1959			PAST RECORD			Prior Yrs. of Record
			Date of Survey	Snow Depth (In.)	Water Content (In.)	Water Content (In.)		1938-52 Average	
						1958	1957		
									2/
<u>WILLIAMS RIVER</u>									
Iron Springs	12R2	6200	1/14	0	0.0	0.0	0.0	1.3	13
Camp Wood 1/	12R1	5700	1/14	0	0.0	0.0	0.0	1.1	12
Willow Ranch	13P1	5000	1/14	0	0.0	0.0	---	1.7	11
<u>LOWER COLORADO RIVER</u>									
Bright Angel 3/	12N1	8400	No Survey			3.6	2.7	7.0	11
Grand Canyon	11P1	7500	1/15	1	0.2	0.0	0.2	2.4	11
Fort Valley 3/	11P2	7350	Report Delayed			0.0	0.0	2.9	12
Chalender 1/	12P1-M	7100	1/14	T	T	0.0	0.0	3.4	12
<u>LITTLE COLORADO RIVER</u>									
Ft. Apache	9R5	9160	1/14	9	1.6	2.7	2.8	---	7
Baldy	9S1	9125	1/14	5	0.9	2.2	2.7	---	8
Nutriosio	9S4	8500	1/14	T	T	0.2	0.0	1.9	19
Happy Jack 1/	11R5	7630	1/14	0	0.0	0.0	0.0	---	6
Gentry	10R5	7600	1/13	T	T	0.0	0.0	---	7
Heber	10R4	7600	1/13	T	T	0.0	0.0	---	7
Canyon Creek #2 3/	10R7-M	7500	1/13	T	T	0.0	---	---	1
Mormon Mountain	11R3-M	7500	1/12	3	1.0	0.0	T	---	8
Mormon Lake	11R4	7350	1/12	4	0.8	0.0	T	4.0	12
Fort Valley 3/	11P2	7350	Report Delayed			0.0	0.0	2.9	12
McNary	9R2-M	7200	1/14	0	0.0	0.0	0.0	2.3	18
Forest Dale	10R6	6430	1/14	0	0.0	0.0	0.0	0.8	18

1/ On adjacent drainage.

2/ 1938-52 averages are estimated from existing records within period.

3/ Not included in watershed averages.



# PRECIPITATION AT SELECTED ARIZONA STATIONS <sup>1/</sup>

STATION	Precipitation (Inches)			
	December - 1958		Current Water Year (Oct. 1958 - Dec. 1958)	
	Total	Departure from long term mean	Total	Departure from long term mean
Ash Fork	Trace	- 1.27	2.54	- .02
Clifton	.10	- .97	2.60	+ .32
Douglas Smelter	0	- .71	1.76	- .02
Flagstaff WBAS <sup>2/</sup>	Trace	- 1.86	2.25	- 1.96
Grand Canyon Hq.	.23	- 1.28	1.73	- 1.39
Parker	0	- .68	.54	- .60
Payson Ranger Station	0	- 2.00	2.94	- 1.55
Phoenix WBAS <sup>2/</sup>	0	- .97	.66	- 1.18
Prescott WBAS <sup>2/</sup>	Trace	- 1.37	1.02	- 1.65
Springerville	.10	- .40	1.89	+ .31
Tucson WBAS <sup>2/</sup>	0	- .94	2.28	+ .11
Winslow WBAS <sup>2/</sup>	.02	- .51	.69	- .82
Yuma WBAS <sup>2/</sup>	0	- .55	.65	- .36

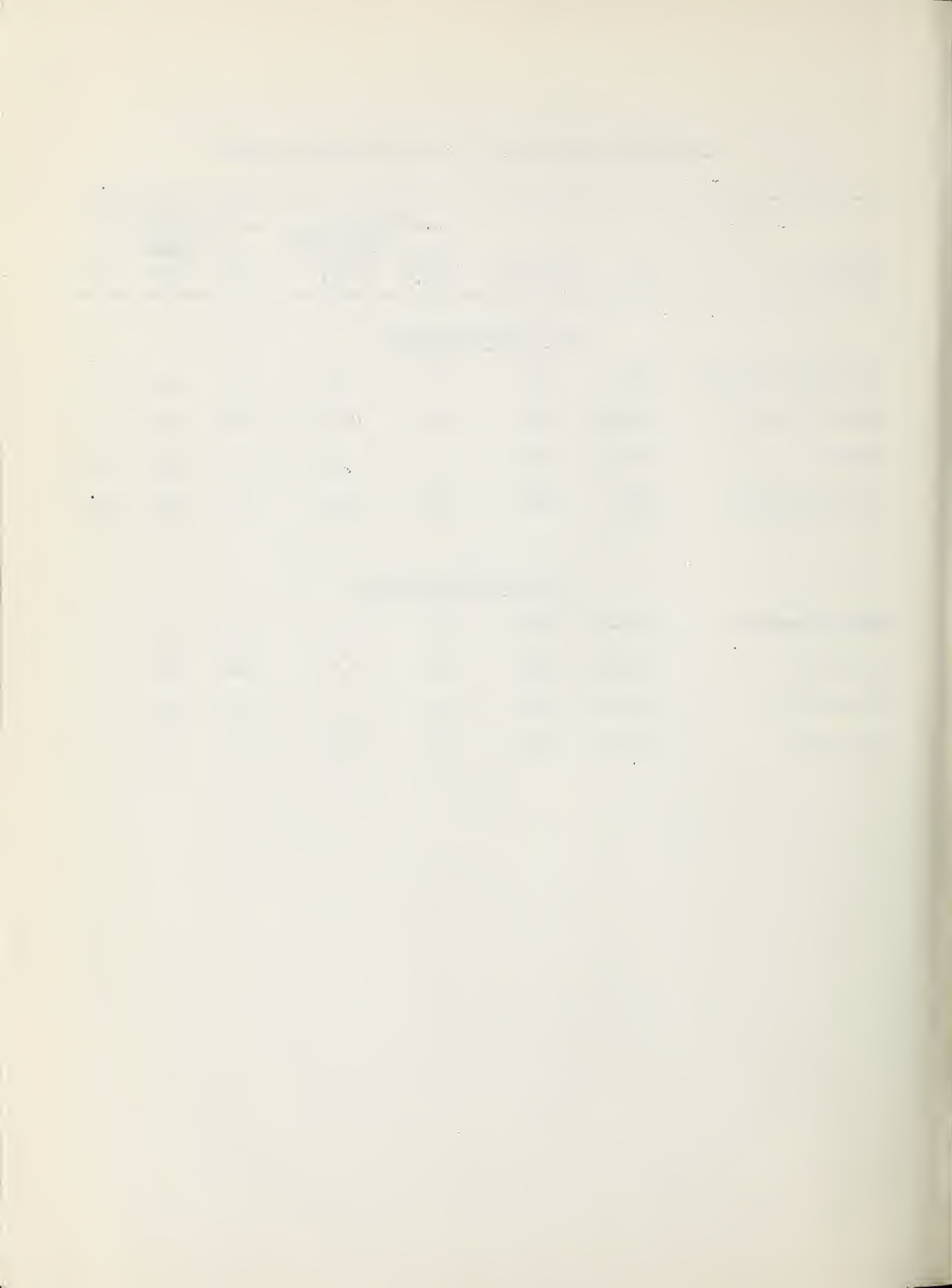
<sup>1/</sup> Data and Analysis furnished by Paul C. Kangieser, Arizona State Climatologist, U. S. Weather Bureau, Phoenix, Arizona.

<sup>2/</sup> WBAS = Weather Bureau Airport Station.



AVAILABLE SOIL MOISTURE - ABOUT JANUARY 15, 1959

STATION	No.	Elevation	PROFILE		SOIL MOISTURE in		
			Depth (In.)	Available Capacity (In.)	<u>Inches</u>		
					1959	1958	1957
<u>SALT RIVER DRAINAGE</u>							
Black River Divide	9S10	9100	48	8.2	7.9	8.0	0.5
Canyon Creek #2	10R7-M	7500	48	8.5	8.4	8.0	---
McNary	9R2-M	7200	48	8.0	5.2	4.2	8.1
Corduroy Creek	10R8	6000	48	8.0	0.0	2.0	4.1
<u>VERDE RIVER DRAINAGE</u>							
Mormon Mountain	11R3-M	7500	48	8.3	8.1	8.2	8.0
Chalender	12P1-M	7100	48	8.3	0.0	4.0	0.0
Casner Park	11R2-M	6950	48	8.7	6.6	6.7	8.3
Munds Park	11R1-M	6500	48	9.0	12.7	8.5	---



LIST OF SNOW SURVEYORS

<u>SNOW COURSE</u>	<u>SURVEYOR</u>
Baldy . . . . .	SCS and SRVWUA
Bear Wallow . . . . .	Forest Service - W. D. Nelson
Beaver Head . . . . .	N. A. Josh
Black Canyon . . . . .	Wayne Black
Bright Angel . . . . .	National Park Service
Camp Wood . . . . .	Mrs. C. C. Merritt
Canyon Creek #2 . . . . .	SCS and SRVWUA
Casner Park . . . . .	SCS and SRVWUA
Chalender . . . . .	Forest Service - M. C. Oleson & F. E. Page
Coronado Trail . . . . .	Forest Service - Bill Brainard
Forest Dale . . . . .	Fort Apache Reservation - Valverde & Endfield
Frisco Divide . . . . .	Forest Service - Frank Carroll
Ft. Apache . . . . .	SCS and SRVWUA
Fort Valley . . . . .	Rocky Mt. Forest & Range Experiment Station
Gaddes Canyon . . . . .	SCS - Richard Enz
Gentry . . . . .	SCS and SRVWUA
Grand Canyon . . . . .	National Park Service - Vincent Hefti
Happy Jack . . . . .	Emil Ryberg
Heber . . . . .	SCS and SRVWUA
Inman . . . . .	C. H. McCauley
Iron Springs . . . . .	Ernest Saxby
McNary . . . . .	Fort Apache Reservation - Valverde & Endfield
Maverick Fork . . . . .	SCS and SRVWUA
Milk Ranch . . . . .	Fort Apache Reservation - Valverde & Endfield
Mingus Mountain . . . . .	SCS - Richard Enz
Mogollon . . . . .	J. R. Wray
Mormon Lake . . . . .	SCS and SRVWUA
Mormon Mountain . . . . .	SCS and SRVWUA
Munds Park . . . . .	SCS and SRVWUA
Nutrioso . . . . .	Forest Service - Bill Brainard
Pacheta . . . . .	Foch Phillips
Rose Canyon . . . . .	Forest Service - W. D. Nelson
State Line . . . . .	Forest Service - Frank Carroll
Taylor Creek . . . . .	C. H. McCauley
Willow Ranch . . . . .	Tiny Miller
Workman Creek . . . . .	Rocky Mt. Forest & Range Experiment Station



# The Following Organizations Cooperate in the Arizona Snow Survey Work

## FEDERAL

### Department of Agriculture

Soil Conservation Service

### Forest Service

Apache Forest

Coconino Forest

Coronado Forest

Gila Forest

Kaibab Forest

Prescott Forest

Rocky Mountain Forest and Range Experiment Station

### Department of Commerce

Weather Bureau

Arizona Section

### Department of Interior

Bureau of Reclamation

Region III

Geological Survey

Arizona District

Bureau of Indian Affairs

Fort Apache Reservation

National Park Service

Grand Canyon National Park

Gila Water Commissioner

Safford, Arizona

## IRRIGATION PROJECTS

Salt River Valley Water Users' Association

Phoenix, Arizona

San Carlos Irrigation and Drainage District

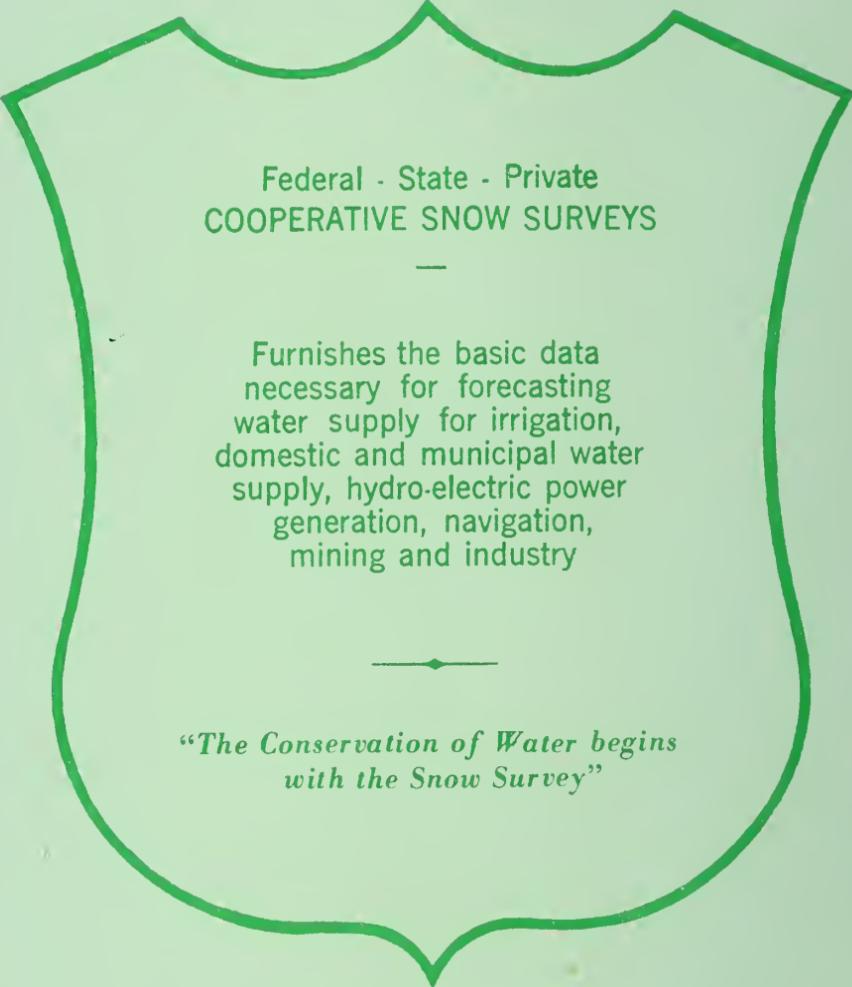
Coolidge, Arizona

## PRIVATE

Southwest Lumber Mills, Inc.

McNary, Arizona

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.



Federal - State - Private  
COOPERATIVE SNOW SURVEYS

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Furnishes the basic data  
necessary for forecasting  
water supply for irrigation,  
domestic and municipal water  
supply, hydro-electric power  
generation, navigation,  
mining and industry

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*"The Conservation of Water begins  
with the Snow Survey"*